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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,666	02/05/2002	Takashi Hiroi	501.41125X00	4688

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EXAMINER

FERNANDEZ, KALIMAH

ART UNIT PAPER NUMBER

2881

DATE MAILED: 05/23/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/062,666

Applicant(s)

HIROI ET AL.

Examiner

Kalimah Fernandez

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 April 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Objections

1. Claim 21 is objected to because of the following informalities: the recitation of "updated and displayed in accordance with said changed threshold value data" lacks antecedent basis. Appropriate correction is required.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

And/or

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

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Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-8 and 12-14 is rejected under 35 U.S.C. 102(b) as being anticipated by US Pat No 6,047,083 issued to Mizuno.

3. Mizuno discloses irradiating either a charged particle or a light on a surface of a substrate on which a pattern is formed (col.5, lines 5-14).

4. Mizuno discloses obtaining an image of said substrate surface by detecting secondary electrons generated from said substrate as a result of the irradiation (col.3, line 66- col.4, line 8).

5. Mizuno discloses producing a digital image by subjecting the produced image signal to A/D conversion (col.6, lines 37-39).

6. Mizuno discloses comparing the digital image with a reference image stored in a memory (col.3, lines 44-53).

7. Mizuno discloses outputting information of the extracted defect candidate including image of the extracted defect candidate (col.5, lines 29-32).

8. As per claim 2, Mizuno discloses the step of displaying the outputted image of the extracted defect candidate on a display screen (col.5, lines 37-39).

9. As per claim 3, Mizuno discloses said information outputted at the outputting step includes data enabling the classification of the defect (col.3, lines 38-41).

10. As per claim 4, Mizuno discloses the step of displaying in a map format the defect candidate outputted at the step of outputting (col.4, lines 36-40; col.5, lines 8-20).

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Specifically, Mizuno discloses the generation of a wafer map that is used for imaging any defect candidate in a map format.

11. As per claim 5, Mizuno discloses the step of displaying an image of a defect candidate designated in the map displayed on the screen (col.5, lines 37-39; see fig. 6b).

12. As per claim 6, Mizuno discloses detecting a defect candidate of a pattern by using an inspecting means (col.2, lines 11-30).

13. Mizuno discloses outputting an image of this detected defect candidate and data including location information of the defect candidate via a storage medium (col.6, lines 39-52).

14. Mizuno discloses inputting said defect candidate image and data including location information of the defect candidate outputted via said storage medium to processing means (22) (col.6, lines 41-43).

15. Mizuno discloses displaying on a screen of the processing means (22) (col.6, lines 41-43).

16. As per claim 7, Mizuno discloses the defect candidate location data is displayed in map format on said screen (col.6, lines 53-58).

17. As per claim 8, Mizuno discloses displaying the image of the defect candidate on said screen (col.6, lines 44-52).

18. As per claims 12-13, Mizuno discloses a step for displaying on the screen, said defect candidates are classified using the images of defect candidates are classified using the images of defect outputted via said storage medium (col.6, lines 59-67; col.7,

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lines 32-34). In addition, Mizuno discloses indicating the location of the defect and location data of these classified/designated defect candidates is identified by classification and displaying in map format on said screen (col.7, lines 31-34; fig.6b).

19. As per claim 14, Mizuno discloses identifying said classified defect candidate by location and classification (see fig. 6b; col.7, lines 18-30).

20. Claims 6-9, 13 and 15-24 are rejected under 35 U.S.C. 102(e) as being anticipated by US Pat No 6,539,106 issued to Gallarda et al.

21. As per claim 6, Gallarda et al discloses detecting a defect candidate of a pattern by using an inspecting means (205) (col.3, lines 19-23).

22. Gallarda et al discloses outputting an image of this detected defect candidate and data including location information of defect candidate via a network (220) (col. 6, lines 29-35).

23. Gallarda et al discloses inputting said defect candidate image and data including location information of defect candidate outputted via said network to processing means (col.5, ines 1-34). In addition, Gallarda et al discloses displaying on a screen of processing means (col.5, lines 1-4; col.6, lines 32-35).

24. As per claim 7, Gallarda et al discloses the defect candidate location data is displayed I map format on said screen (col.5, lines 12-14).

25. As per claim 8, Gallarda et al discloses displaying on a screen (col.6, lines 32-35).

26. As per claim 9, Gallarda et al discloses the defect candidate, whose image is displayed on said screen, is designated on this screen (see fig. 3).

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27. As per claim 15, Gallarda et al discloses a network (col.5, lines 26-29).

28. As per claim 16, Gallarda et al discloses imaging a substrate on which a pattern is formed (col.3, lines 19-23).

29. Gallarda et al discloses processing an image obtained by said imaging to detect a defect candidate of said pattern (col.3, lines 39-55).

30. Gallarda et al discloses outputting via network (col.5, lines 26-29), an image of said detected defect candidate and data location information of the defect candidate while carrying out the step of imaging said substrate and the step of detecting a defect candidate of said pattern (col.9, lines 25-34). Namely, Gallarda et al discloses the repeating of imaging step and detecting step while outputting an image of said detected defect candidate on a display.

31. Gallarda et al discloses displaying, on a screen, said defect candidate image and data including the location information of the defect candidate outputted via this network (col.6, lines 28-35).

32. As per claim 17, Gallarda et al discloses data of the location information of defect candidate is displaying in map format on said screen (col.5, lines 12-14).

33. As per claim 18, Gallarda et al discloses an image of the defect candidate is displayed in said screen (col.6, lines 32-35).

34. As per claim 19, Gallarda et al discloses the defect candidate, whose image is displayed on said screen, is designated on the screen (see fig.3).

35. As per claims 20-21, Gallarda et al discloses the step of changing threshold value data for detecting defect candidate of said pattern on said pattern and displaying

utilizing said changing threshold (i.e. updating the display in accordance with the changing threshold) (col.8, lines 59-60; col.12, lines 37-42).

36. As per claim 22, Gallarda et al discloses defect candidate matching (col.13, line 56-col.14, line 19).

37. As per claims 13 and 23, Gallarda et al discloses defect candidate location data designated from among the classified defect candidate is displayed in map format on said screen (col.16, lines 60-63).

38. As per claim 24, Gallarda et al discloses producing a list or table from among said classified defect candidates are displayed on said screen discriminately from each other in the map format (col.14, lines 58-62).

Conclusion

39. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Pat No 5,578,821 issued to Meisberger et al.

40. Meisberger et al discloses imaging a substrate on which a pattern is formed (col.1, lines 14-17; col.4, lines 13-16).

41. Meisberger et al discloses processing an image obtained by said imaging to detect a defect candidate of said pattern (col.3, lines 56-59).

42. Meisberger et al discloses outputting via a network (col.4, lines 37-50) an image of said detected defect candidate and data including location information of the defect candidate while carrying out the step of imaging said substrate and the step of detecting a defect candidate of said pattern.

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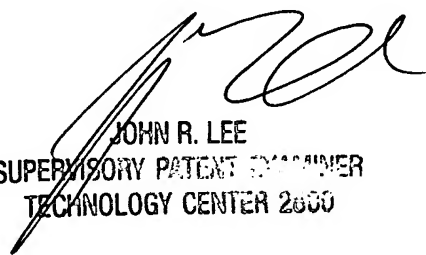
43. In addition, the following prior art is relevant to the claimed invention: US Pat No. 5,502,306 issued to Meisburger et al, US Pat No 6,545,491 issued to Kim et al, and US Pat NO 6,047,083 issued to Mizuno.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kalimah Fernandez whose telephone number is 703-305-6310. The examiner can normally be reached on Mon-Thus between 8:30am-6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, John Lee can be reached on 703-308-4116. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

kf
May 18, 2003


JOHN R. LEE
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